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XII.—*Remarks on the Physical Geography of North America.*
By C. S. RAFINESQUE. Philadelphia, April, 1840.

1. THE physical features of the earth are the most permanent, while its political and ethnographical features are often very fluctuating, particularly in countries recently settled. Yet the physical geography of all regions has hitherto been much neglected, particularly that of North America.

2. Formerly, hardly any notice was taken of the mountains, table-lands and valleys of this continent. None but the largest lakes were roughly noticed in maps, and the streams were laid down at random in straight lines, as we may perceive by referring to maps even as modern as those published only forty years ago.

3. The public surveys even of a later date do not correct the whole of these errors: the course of some streams has indeed been rectified, and many smaller lakes have been laid down; but the mountains and hills, table-lands and plains, valleys and slopes, are hardly distinguished. The public surveyors are not required to do so, but merely to run lines and lay out square sections of land, which it is usual to represent as level or flat, although they may be full of inequalities.

4. It is only lately that levelling surveys have been required to trace the tracks of roads, canals, railways, &c.; and these, although greatly multiplied, do not extend to every part of the country. It was as late as 1818 that I mapped the whole course of the river Ohio, with all its hills, slopes, cliffs, bottoms, islands, &c.; before which the old map of Evans was the only guide; and even the valley of the Ohio, as bounded by hills on each side, and thus traced, has not yet been marked in all maps. It was only in 1832 that I drew for Tanner the hilly boundaries of the limestone plains of Kentucky, Ohio and Indiana, never before noticed.

5. The same results and want of information as to all the features of physical geography exist throughout America; and although large State-maps of nearly all the States have been published, they are all full of errors and omissions of this kind. Although great pains are taken to insert new counties and townships as soon as possible, the old hills, slopes and valleys, that have stood since the flood, are often neglected. It often happens that, where a large plain is delineated, it is a broken table-land, 1000 feet or more above the sea; where a single ridge is given, it may be broken into many with valleys and gaps.

6. I have now before me three large and recent maps, in four sheets, of Pennsylvania, North Carolina and Kentucky, showing a goodly array of mountains, ridges, valleys, &c., but omitting as many more that I know to exist, besides numberless hills, de-

pressions, small lakes and streams, &c.; and the same is the case in all our maps, with hardly any exception, even in the large county maps of New York, where the northern slopes of the Alleghanies are scarcely noticed.

7. In consequence of this neglect we do not yet know the mountainous features of North America, nor the configuration of the land: even the State surveys now in process for geology do not attend to mapping the hills and valleys; and it is quite recently that the Saranac Mountains west of Lake Champlain have been found to equal the Wapani, or White Mountains, to the east of it. The Unaka, or Iron Mountains, of North Carolina, likewise, have been found to be full of peaks exceeding those of the Wapani both in number and height, thus forming the two great ends and nucleus of the Alleghany chain to the N.E. and S.W.

8. It is owing to such neglect that a difficulty and collision has arisen on the borders of Maine and New Brunswick with respect to the settlement of the real boundaries between those States and Canada; and that many sources of future difficulties are in reserve elsewhere, between States, territories and adjacent possessions.

9. These facts, as well as the desire of improving geography by ascertaining the real features of the earth, ought to stimulate both Great Britain and the United States to study, delineate and lay down all the natural features of land and water in the Canadas and the United States, as well as in Boreal America and Oregon.

10. Meantime, although the general outlines of this continent are well known, its natural regions are far from being traced with accuracy, either physically or geologically: but to fix the physical limits of different regions is properly an important branch of geography.

11. To detect, expose and correct all the mistakes of our maps and books of geography would be a waste of time, and might fill a volume. I must confine myself to the assertion of the fact that gross errors exist in all of them, and endeavour to trace the natural outlines of this continent more correctly.

12. The great regions of North America beyond Mexico are eight, although each may be subdivided into smaller sections: the former are—

1. The Boreal, or region of the lakes.
2. The Atlantic, or region of the littoral plains.
3. The Apalachian, or region of the Alleghanies.
4. The central region, or basins of the Mississippi, Missouri, Ohio, &c., and all their affluents.
5. The Ozark and Taos Mountains.
6. The Floridan and Gulf region of plains.

7. The Origon Mountains and region.

8. The New Albion region, from California to the Columbia river, &c.

13. All these regions have peculiar physical features, extent, climate, soil, productions, &c., and deserve to be studied separately, to have their limits well traced, their altitudes measured, and their peculiarities described; while at present our knowledge of them is extremely imperfect, even in the well-settled parts.

14. The Boreal region includes all the most northern parts as far as Canada and New England. It is eminently a region of lakes and their basins, with few mountains except the northern spurs of the Alleghanies and Origon. It includes myriads of lakes, large and small, and, being so vast, might easily be divided into the subordinate regions of New England and Nova Scotia, Canada, Labrador, Hudson's Bay, Mackenzie's River, Alaska, &c.

15. The Atlantic region extends along the Atlantic Ocean, from Long Island to Florida, narrow at first, but widening to the south, and blending with the 6th region. It has neither lakes nor watery shores; but, instead of them, swamps and sandy plains and shores. Mountains are wanting, and there are only a few small hills scattered widely apart. I have given a complete view of this region in my Atlantic Journal for 1833, and traced one of its great features, *the littoral islands*, by which it is lined, except in a few breaches of estuaries.

16. The mountainous region called Apalachian S. of the Potowmack, and Alleghany N. of it, is of vast extent, far exceeding the Alps and Carpathian mountains of Europe. It runs from N.E. to S.W., in numerous chains and ridges, with valleys, basins, gaps and even peaks innumerable. It was once a region of lakes, which have burst their barriers and left many large basins. It is highest towards the S.E., where it is called the Unaka (meaning the "first ground"), and now also the Iron Mountains, and sends lower spurs to the S.W., with a due western direction. The western range were the Wasioto mountains, now Cumberland, intruding into the western plains, as several hilly ridges do on the eastern side, and to the N.E. blending with mountains of New England and Canada by the Mattawan and Taconik ranges, also the Saranac to the N.E., that are an appendage of the Kiskanom, or Catskill mountains, merely separated from them by the Mohawk valley. It is in this region that discoveries in oreology, geology, and even geography, are yearly made, though not always recorded.

17. The large central region, miscalled the valley of the Mississippi (for it is not a valley), is rather a vast basin, open and drained to the S., consisting of hills, slopes, and plains. The

slopes of the Alleghanies and Ozark mountains form a great part of it, E. and W., being broken table-lands. The great peculiarities of this region are the huge streams, sunken into narrow valleys bordered by cliffs and bluffs, alternating with beds of former lakes.

18. The Ozark region, blending with the Taos mountains, E. of New Mexico, is as extensive as the Alleghanies, broken into hills, valleys and lofty plains. It is distinguished by knolls or conical hills scattered throughout, as well as arid plains, bare of wood, like the steppes of Siberia. These ranges are of course still less known than the Apalachian ridges.

19. The level region of Florida, Alabama, Louisiana and Texas, bordering on the Gulf of Mexico, might be deemed a prolongation of the Atlantic plains, if it were not for some peculiarities of its own; it has more hills, less swamps, except near the delta of the Mississippi; vast savanas, instead of pine-woods, some rocky islands, &c. The peninsula of Florida stretches far south, and partakes of the geological character of the Bahamas, having also been once a cluster of islands; and in Texas, where it blends with Mexico, the soil is drier and less sandy.

20. The region of Origen, the loftiest in North America, is deemed a continuation of the Mexican mountains, but not so volcanic nor dry. It includes many ranges running from S. to N., besides lateral chains; its northern termination is as yet hardly known, but gradually blends with the lake-region, being full of lakes and peaks, glaciers and basins.

21. The last region, or most westerly, is that extending from the N.W. archipelago to the end of California, thus including New Albion and Origen or Columbia, &c. It is a very peculiar region, bordered by a maritime chain of mountains and hills, with wide basins and deserts E. of it, to the foot of the Origen mountains. It is distinguished by aridity and a volcanic but often fruitful soil, with a milder climate than that of the Atlantic shores, &c.

22. Such are the main natural regions of this Continent, teeming with peculiar animal and vegetable productions; the woody tracts of the east gradually changing into mere groves west and north, and finally disappearing, as even California has but few trees. Glades, prairies or savanas, with the arid cactoides, gradually appear to the W., palms to the S., and naked rocks to the N., as I have described them in my Botanical Geography of North America, given in my new Flora thereof.

23. In Europe great attention has been paid lately to the study of mountains or oreology and oreography; the systems or groups of mountains have been well ascertained and described. Even something has been done towards it for South America and

Asia by Von Humboldt and others ; but in North America *oreography* is as yet a blank, or the materials scattered through the works of fifty travellers are not yet embodied into one proper account.

24. I have collected these fragments and tried to render them available ; but knowing the defects in the localities that I have visited from Canada to Virginia and Tennessee, I am fully aware that we only possess the outlines of other parts, and must wait for better geographers to enlighten us on the remote ranges of our mountains. I can safely assert that with respect to mountains all our maps at present are defective in the highest degree.

25. However, we may assume in a general point of view, and to help us in further inquiries, that there are five great systems, groups or ranges of mountains in North America :—

1. The Canadian and Labrador ranges.
2. The Alleghany and Apalachian, including New England.
3. The Ozark and Taos ranges.
4. The Origon ranges.
5. The Californian ranges.

26. Yet all these might be traced as winding, connected ranges, scarcely separated by rivers, or lakes, or table-lands. Thus the Canadian mountains, although cut through by the St. Lawrence, blend with the Saranak mountains S. of it. These link with the Kiskanom mountains at the falls of the Mohawk river. The Hudson river barely separates these Kiskanom mountains and the Shawangunk S. of them from the Mattawan mountains E. of these, from the Taconik mountains, their northern elongation, and from those uniting with the Wapani or White mountains at the source of the Connecticut river, which become the Green mountains of Vermont, W. of Lake Champlain, and send hilly spurs throughout New England to Gasperia and Nova Scotia.

27. On the other side, all the Apalachian ridges and slopes are connected at their origin. The hilly region of Ohio extends to Illinois, and links with the Ozark ranges S. of St. Louis, while it becomes a lofty table-land at the sources of the Mississippi. This wide table-land, broken into many basins, expands to the N.W. and unites with the Origon chain, which is quite linked with the Taos chain at the sources of the Missouri, Colorado, and Origon rivers. Even the Californian range links with them by many transversal hills and slopes.

28. Thus all the clusters and chains of mountains in North America might be deemed a single system, and being also united on the S. with the Mexican mountains and table-land, the whole is connected as far as Lake Nicaragua, where the first great transversal depression of land occurs in this continent. The second is at the valley of Choco, S. of Darien, and beyond it are

the real Andes, stretching from Cumana to Chili: while the mountains of Guyana, Brazil and South Patagonia, as well as Tierra del Fuego, appear to form as many separate clusters. Guyana is certainly insulated by the plains of the Orinoco and Marañon, but the Brazilian mountains may link with the Andes by the table-land of Parexis.

29. Such is a rapid sketch of American oreography, the details whereof might fill many volumes, and require 100 maps. It is a labour reserved for future more enlightened or enterprising generations, and we can only accumulate and compare materials as they are obtained. I have many to offer on the mountains of the United States at least, and maps made by myself.

30. I have always endeavoured to restore the old and good aboriginal names of our mountains, and I hope that this example will be scrupulously followed by future oreographers.

True Names of some Mountains in North America.

True Names.	Vulgar Names.
Origion mountains	Rocky, Stony, Chepewyan, Hollow Mountains.
Taos and Ozark	(Adopted).
Wasioto	Cumberland mountains, Chesnut to the N.
Sioto hills	Hills and knolls of Ohio, Indiana, &c., called Silver hills westward.
Wasioto hills	Hills and knolls of Kentucky.
Unaka mountains	Iron mountains of Carolina, the main Apalachians.
Tuscorora mountains	Tuscorora and Cove mountains.
Kitaniny in Pennsylvania .	} Blue-ridge in Virginia.
Mattawan in New York . .	
	} Schooley in New Jersey.
	} South mountains in Pennsylvania.
	} Highlands in New York.
Konestoga hills	Conestoga and Welsh mountains.
Shawangunk mountains . . .	(Adopted).
Kiskanom mountains	Catskill mountains.
Okuago mountains	Their N.W. end at the source of Delaware river.
Saranak mountains	Peru and Macomb mountains at the source of the Hudson river.
Takonik mountains	Adopted to the S., become the Green mountains to the N.
Wapani mountains	White mountains of New Hampshire 2° N.E., or most northern nucleus of the Alleghanies.
Yeona hills	Hope hills of Georgia, S. end of the Apalachians.

True Names.	Vulgar Names.
Kowita mountains	The Western Unaka range.
Konewango mountains	Chatauque Mountains, the N.W. corner of the Alleghanies.
Manatango mountains	Broad mountains of Pennsylvania.
Juniata mountains	Backbone mountains of Pennsylv.

N.B. These mountains and many others are described in my Atlantic Journal, their elevations given, &c. ; but the Unaka and Saranak have lately been found to be much higher, as here surmised.

[In some "Remarks on New Colonies," communicated to the Royal Geographical Society by the same author, but not published,—as the paper contains little that is new or that belongs properly to the Society's leading objects, the extension of geographical and ethnographical knowledge,—he observes, after pointing out the various parts of the Old World which present an opening for British colonisation, that in America, "New Albion, discovered by Drake, now called New or North California, to which the British nation has a distant claim, and which, as well as the peninsula of California, is useless to Mexico, may easily be purchased. If it is not, it will within twenty or fifty years be certainly invaded and colonised by the Texans, to fill it perhaps with slaves and make it a *cotton* country, for which its soil and climate are well suited." He also adds in a note, that "some Americans are already contemplating the invasion and conquest of this Tract."—ED.]

XIII.—*Ethnographical Remarks on the Original Languages of the Inhabitants of the Canary Isles.* By Don J. J. DA COSTA DE MACEDO, Perpetual Secretary to the Royal Academy of Sciences at Lisbon.

[Don J. de Macedo having observed that Dr. Pritchard, in his able "Researches into the Physical History of Mankind," (Book iii. ch. 2, ii. p. 32.) calls the ancient inhabitants of the Canary Isles, Guanches, and considers them as belonging to the same race as the Berbers on the African continent, thought it might be useful to show that those positions are controvertible, and that it may be proved from original authorities that neither of them can be maintained. In the original Essay, after introducing the subject by referring to a correspondence respecting it with Captain Washington, to whom this paper was addressed, he arranges his observations under the following heads.—ED.]

THE object of my remarks will be, 1st—to prove that the name of Guanches applies only to the inhabitants of Tenerife, and not to the natives of the other Canary Isles ; and, 2ndly—that those